

iPSC-Derived Retina Transplants Improve Vision in *rd/rd* End-Stage Retinal-Degeneration Mice

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After publication of our recent manuscript in *Stem Cell Reports* (Mandai et al., 2017), and as it was kindly suggested by some researchers in the related field, we realized that there was some ambiguous description in the Introduction and some confusion as to which photoreceptors had been used in each study (harvested fetal-, neonatal-, or ES/iPS-derived tissues/cells). We would like to make the following corrections to the text and cite several additional papers as indicated below.

First, we would like to add a brief description of the work referenced in the first sentence of the Introduction and include references to the work of Radner et al., 2001; Woch et al., 2001; Sagdullaev et al., 2003; Seiler et al., 2008; and Seiler et al., 2010, replacing the sentence as follows. The original sentence reads “Although fetal retinas have been transplanted into patients with retinal degeneration, there is no conclusive evidence that these transplants can restore visual function.” The corrected text reads “Neonatal and fetal retina sheet transplants are reported to restore activity in host retinal ganglion cells or superior colliculus, a midbrain visual center for motor commands, in some mice and rats with retinal degeneration (Woch et al., 2001; Radner et al., 2001; Sagdullaev et al., 2003), and fetal retinas have been transplanted together with retinal pigment epithelium into patients with retinal degeneration and improved vision in some patients (Radtke et al., 2008). Mechanisms have been suggested as neurotrophic effect (Radner et al., 2001) or synaptic connections between unspecified inner retinal cells of host and graft (Seiler et al., 2008; Seiler et al., 2010), but there is no conclusive evidence that photoreceptors in these retina transplants can form functional synapses with host bipolar cells.”

Second, we would like to add one reference (here underlined) that was missing, as follows: “These reports, together with a number of reports describing protocols to differentiate retinal tissue from human ESCs or induced pluripotent stem cells (iPSCs) (Kawahara et al., 2015; Nakano et al., 2012; Zhong et al., 2014)...”

Third, we would like to add the underlined words to specify graft source to the second paragraph of the Introduction, as follows: “Recent studies using cell suspensions of postnatal mouse photoreceptor precursors or human ES/iPS derived photoreceptor precursors in end-stage retinas, which have lost the ONL, indicated possible light response by pupillary reflex and behavior tests, although direct evidence of light response from the graft cells or synaptic function is still lacking.”

Fourth, also in the second paragraph of the Introduction, we would like to make the following change and add one reference (underlined). The original sentence reads “In addition, retinal grafts in the form of cell suspension or microaggregates did not generally survive for long, whereas a retinal graft sheet in a clinical trial was observed to survive 3 years after the transplantation (del Cerro et al., 2000; Mandai et al., 2012; West et al., 2010).” The corrected sentence reads “In addition, rat fetal retina sheet grafts (Sagdullaev et al., 2003) apparently survive longer than mouse cell suspensions (Mandai et al., 2012; West et al., 2010), and a fetal retinal graft sheet in a clinical trial was observed to survive 3 years after the transplantation, while transplants in the form of microaggregates were no longer detected (del Cerro et al., 2000).”

Finally, in the same paragraph, we would like to add the following underlined words to specify graft source:

“Reconstruction of a structured ONL would definitely be ideal in these cases, but it has not been clearly demonstrated that an ES/iPS-derived structured, retina-like sheet can restore visual function.”

The corrected article is now online.

We apologize for any confusion this may have caused or grievance to authors whose work was not cited.



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